q: 7/9

Serial No: 09/936,354

Olbert et al.

PF 49845

Claim Amendments:

Amend claim 12 as set forth in the following listing of claims:

1-11. (canceled)

- 12. (currently amended) A multitube reactor (13) which has a catalyst tube bundle (18) comprising numerous parallel catalyst tubes (17) arranged within an outer wall (15), said catalyst tube bundle (18) having from 10,000 to 50,000 catalyst tubes (17), and having means for introducing and discharging a heat transfer medium said means being adapted such that the heat transfer medium, is essentially conveyed radially or transversely around the catalyst tubes, wherein the ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube is in the range from 1.3 to 1.6.
- 13. (previously presented) A multitube reactor as claimed in claim 12, wherein the ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube (17) rises with increasing transverse dimensions of the catalyst tube bundle (18).
- 14. (previously presented) A multitube reactor as claimed in claim 12, wherein the catalyst tube bundle (18) has an essentially circular cross section having an external diameter d_{RBa} of more than 4 m.
- 15. (previously presented) A multitube reactor as claimed in claim 14, wherein the external diameter d_{RBa} of the catalyst tube bundle (18) is from 4 m to 12 m.
- 16. (previously presented) A multitube reactor as claimed in claim 15, wherein the external diameter d_{RBa} of the catalyst tube bundle (18) is from 4 m to 10 m and the

-6-051114 Serial No: 09/936,354

Olbert et al.

PF 49845

- ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube (17) is in the range from 1.3 to 1.5.
- 17. (previously presented) A multitube reactor as claimed in claim 12, wherein the catalyst tube bundle (18) has an essentially rectangular cross section with a tube bundle depth d_{RBi} measured parallel to the flow direction of the heat transfer medium of at least 1.3 m.
- 18. (previously presented) A multitube reactor as claimed in claim in claim 17, wherein the depth d_{RBI} of the catalyst tube bundle (18) is from 1.3 to 4 m.
- 19. (previously presented) A multitube reactor as claimed in claim 12, wherein the reactor is divided, in the longitudinal direction of the catalyst tubes (17), into a least two zones (36,37), with a flow of heat transfer medium of different temperature being provided in each zone.
- 20. (withdrawn) A method for carrying out a catalytic gas-phase reaction, said method comprising introducing gas-phase reactants to the multitube reactor as claimed in claim 12.
- 21. (withdrawn) A method for carrying out a catalytic gas-phase reaction as claimed in claim 20, wherein the reaction is an oxidation reaction.
- 22. (withdrawn) The method of claim 21, wherein a phthalic anhydride, maleic anhydride, acrylic acid, acrolein, methacrylic acid, glyoxal, phosgene, hydrocyanic acid or vinyl formamide is prepared.
- 23. (withdrawn) The method of claim 21, wherein a phthalic anhydride is prepared.

Fax sent by : 2026590105

Serial No: 09/936,354

Olbert et al.

PF 49845

- 24. (withdrawn) The method of claim 22, wherein heat transfer medium is conveyed radially or transversely around the catalyst tubes in a meandering path.
- 25. (withdrawn) The method of claim 24, wherein the heat transfer medium is a salt melt and flows at from 10,000 to 20,000 m³.
- 26. (previously presented) A multitube reactor as claimed in claim 12, wherein said means for introducing and discharging a heat transfer medium are adapted so as to direct the heat transfer medium in a meandering path.
- 27. (previously presented) A multitube reactor as claimed in claim 12, wherein said catalyst tube bundle has from 10,000 to 30,000 catalyst tubes.